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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,883	02/15/2007	Nicolas Drolet	19226-US-NP	9927
23553	7590	09/14/2011	EXAMINER	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/573,883

**Applicant(s)**

DROLET ET AL.

**Examiner**

Matthew W. Such

**Art Unit**

2891

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 June 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 5) ☒ Claim(s) 18-25 and 27-36 is/are pending in the application.
- 5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 6) ☒ Claim(s) 18-25 and 36 is/are allowed.
- 7) ☒ Claim(s) 29-32 and 35 is/are rejected.
- 8) ☒ Claim(s) 27, 28, 33 and 34 is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-896)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Paper No(s)/Mail Date \_\_\_\_
- 6) ☐ Other: \_\_\_\_
- 7) ☐ Notice of Informal Patent Application
- 8) ☐ Paper No(s)/Mail Date 18 August 2011

## DETAILED ACTION

### *Information Disclosure Statement*

1. The information disclosure statement (IDS) submitted on 18 August 2011 is being considered by the examiner.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 29, 32 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Jin (Eur. Poly. J., Vol. 37).

- a. Regarding claim 35, Jin teaches an organic based device comprising as a first active material a polymer of monomers defined by claim formula II (see Poly(PPV-N-hexylCNz) in Scheme 1 on Page 923). A second comonomer of a C<sub>6</sub> aromatic group is included. R is a linear or branched alkyl group of hexyl and the end capping groups are hydrogen (result of the polymerization reaction). The Examiner notes that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed

invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See, e.g., *In re Pearson*, 181 USPQ 641 (CCPA); *In re Minks*, 169 USPQ 120 (Bd Appeals); *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). See MPEP § 2114. The recitation of “which is an organic Field Effect Transistor (OFET) or an Organic Photovoltaic Cell (OPC)” does not distinguish the present invention over the prior art of Jin who teaches the structure as claimed. The examiner notes that this also applies to claims 29 and 32.

b. Regarding claim 29, Jin teaches that the device comprises a second active material of PPEPPO, with the first active material mixed with the second active material (see blend in Scheme 1 on Page 923).

c. Regarding claim 32, Jin teaches a hole transport layer of Poly(PPV-N-hexylCVz) and an electron transport layer of PPEPPO.

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jin (Eur. Poly. J., Vol. 37) in view of Dutta (Langmuir, Vol. 15; provided with Office action dated 23 July 2010).

While Jin teaches an n-type material of PPEPPO for an electron transporting layer, but does not teach other conventional alternatives of n-type materials for electron transporting layer.

However, Dutta teaches an organic electronic device comprising a mixed layer forming a pn junction and suggest the compound of PTD as a suitable n-type material for electron transporting layers (see Page 607, Right Col., Lines 1-6 and Page 608, Left Col., Lines 15-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use PTD as set forth by Dutta in the device of Jin, since Dutta teaches that PTD is a suitable n-type material for electron transporting layers.

6. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jin (Eur. Poly. J., Vol. 37) in view of Geens (397).

While Jin teaches an n-type material of PPEPPO for an electron transporting layer, but does not teach other conventional alternatives of n-type materials for electron transporting layer.

However, Geens teaches an organic electronic device comprising a mixed layer forming a pn junction and suggest the compound of PCBM as a suitable n-type material for electron transporting layers (see Figs. 2-4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use PCBM as set forth by Geens in the device of Jin, since Geens teaches that PCBM is a suitable n-type material for electron transporting layers (see Geens Para. 0015).

*Allowable Subject Matter*

7. Claims 18-25 and 36 are allowed.
8. Claims 27-28 and 33-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
9. The following is a statement of reasons for the indication of allowable subject matter:
  - d. Regarding claims 18-25 and 36, a search of the prior art does not teach or reasonably suggest an organic based device which is an organic field effect transistor or an organic photovoltaic cell having a first active material the compound of claim formula I as set forth in the context of the entire claim scope.
  - e. Regarding claim 27, a search of the prior art does not teach or reasonably suggest that the first active material is PCVDPATA, in the context of the entire claim scope.
  - f. Regarding claim 28, a search of the prior art does not teach or reasonably suggest that the first active material is PPCVT, in the context of the entire claim scope.

- g. Regarding claims 33 and 34, a search of the prior art does not teach or reasonably suggest that the first active material has no second comonomer, in the context of the entire claim scope.

### ***Response to Arguments***

10. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:
- i. Lee (Synth. Met., Vol. 88), Kim (J. Poly. Sci: Part A: Poly. Chem., Vol. 40) and Ahn (Macromolecules, Vol. 33) each teach carbazolevinylene copolymers for organic electronic devices.
  - ii. Hosokawa ('444) teaches compounds similar to those of claim formula I, but contain -OH groups on the carbazole groups, from which the claims are distinguished.
12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Contact Information***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew W. Such whose telephone number is (571)272-8895. The examiner can normally be reached on Monday - Friday 9AM-5PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kiesha Bryant can be reached on (571) 272-1844. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew W. Such/  
Primary Examiner, Art Unit 2891